

**FULL CIRCLE
TECHNOLOGIES**



**GES SERIES
HARD DRIVE**

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problems, and in the normal horizontal mounting position of main circuit board down. Hard Drives are sealed at the factory and opening one up to look at the heads will immediately void the warranty. Always handle a Hard Drive ONLY BY IT'S FRAME, and observe static discharge rules.

Floppy Drive heads are in constant contact with the actual medium, and therefore become dirty and require periodical cleaning, but don't suffer from the head crash syndrome. Unfortunately the speed of a floppy disk leaves a lot to be desired.

This does not apply to the new range of High Capacity Floppy Drive Systems as these have an average access time of 60 msec and must be treated as Hard Disks.

All our Hard Drives are AUTO BOOTING and AUTO PARKING, although we supply a PARKING PROGRAM on our utilities disk for any other drives you may connect to you system that are not AUTO PARKING.

UNPACKING AND INSTALLATION

Unpack your Hard Drive System very carefully and ensure that the following items are present:

1. This manual.
2. The Complete Hard Drive or

Sub System without drive if so ordered.

3. The Power Cable.
4. The GE-Soft Utilities Disk.

Place your Hard Drive System on a flat stable surface, ensuring that there is sufficient free space around it to allow uninterrupted air flow around the casing. If using the drive in combination with a MEGA ST system, we advise that the Hard Drive be placed as the uppermost unit.

Please ensure that there are no magnetic fields or unnecessary heat sources in the vicinity of the Hard Drive. Please also insure for your own safety and the safety of your system, that there are no liquids, (Including refreshments!) in the close proximity of your Hard Drive and computer system.

After you have decided on the positioning of your Hard Drive, connect the power cable to the Hard Drive by first connecting the cable to the Hard Drive, and then connecting to the mains socket. Now look to see if the mains switch on the front of you drive is switched off, and if not then SWITCH IT OFF! Now ensure that your ATARI computer is switched off, and then connect the DMA cable between the relevant DMA sockets on your system. Full Circle Technologies DMA out to ATARI computer DMA in.

Should you need to change the device number of you Hard Drive, we suggest you contact you local Full Circle Technologies dealer, who will normally perform this service for a nominal charge.

For those with sufficient technical knowledge the pins (Looking from the side inwards!) normally have the following values:

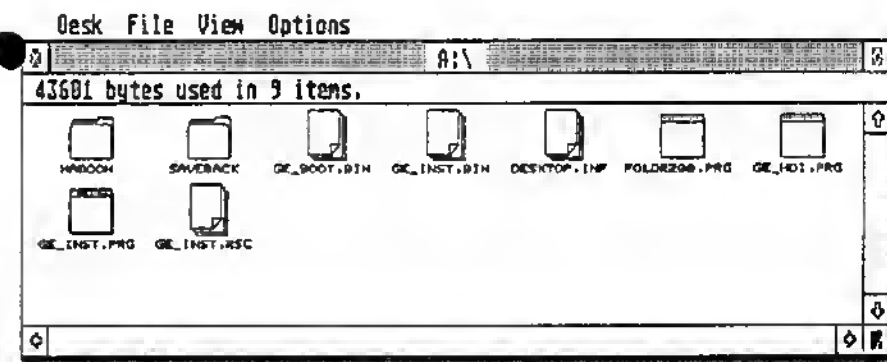
1. 1 (Can be 4 on some new Seagate 3.5" Drives)
2. 2
3. 4 (Can be 1 on some new Seagate 3.5" Drives)
4. Not used.
5. Parity enable/disable

By using different combinations of the first three pins, the DMA value of the drive may be changed to that you require. Your Hard Drive is now ready for use.

THE SOFTWARE

Place your GE-Soft Utilities disk into the connected Floppy Drive and open the drive window by double clicking on the relevant Floppy Drive Icon; the following window will then appear on your screen:

Seven Icons will appear in the window, of which only three are needed to work with the Hard Drive. The Icons GE_INST.BIN, GE_BOOT.BIN and GE_INSTR.RSC are all data files that are used by the main programs and have no significance to the average user, **BUT MUST NOT BE DELETED!**



GE_INST.PRG

To place data and information on the Hard Drive, you must first format and partition it.

FORMATTING:

After double clicking on the GE_INST.PRG, this program will run, and a new window will appear giving you several options. You may install and work on upto eight Full Circle Technologies GES Series MEGA DRIVES with upto two physical drive units per Hard Drive.

These are chosen for formatting and partitioning by clicking on the appropriate DMA-No. and Drive boxes. If that particular DMA and Drive number are connected, then they will become outlined, and the drive type and specifications will appear in the Drive Parameters box.

These parameters may be altered, but doing so may damage or destroy you Hard Drive,

SO UNLESS YOU KNOW EXACTLY WHAT YOU ARE DOING, DO NOT ALTER THESE PARAMETERS. DAMAGE CAUSED BY MISUSE WILL AUTOMATICALLY VOID THE GUARANTEE!

The interface consists of two side-by-side panels. The left panel is titled 'DMA-No.' and contains eight buttons arranged in a 2x4 grid, numbered 0 through 7. The right panel is titled 'Drive' and contains two buttons, numbered 0 and 1. The buttons for '0' in both panels are highlighted with a thick border.

If you wish to alter any parameters, ***THEN PLEASE REFER TO THE TECHNICAL MANUAL OF THE RELEVANT DRIVE, AND DO NOT EXCEED THE VALUES CONTAINED THEREIN.***

will erase any data or information contained on that particular drive, you will first be asked via a CONFIRMATION BOX to CONFIRM FORMAT, YES or NO!. If you should wish to abort the format you

The 'Drive Parameters' window displays the following information:

SEAGATE	
ST296N	
Cylinders	: 817
Heads	: 6
Sectors/Track	: 34
Interleave	: 1
✓ Auto Boot	

After you have decided what to do with the drive parameters, ***AND MAKING SURE THAT YOU'RE WORKING ON THE CORRECT DMA DEVICE AND DRIVE NUMBER.*** goto the drop down menu "FILE", and click on the command "FORMAT DRIVE". Due to the fact that formatting a drive

may still do so. However should you wish to continue with the formatting, then press the "Y" for yes and the drive will immediately begin to format. Formatting a Hard Drive takes quite a time, so I would advise you to go and make a cup of tea or read the newspaper for awhile.

MARKING BAD SECTORS

After formatting the drive will automatically check itself for "BAD SECTORS". These are sectors where it thinks that information may not be able to be stored safely, and it will automatically mark these and avoid writing data and information there.

All Hard Drives of all makes have a few "BAD SECTORS" already on them when they are made, and these are placed in a special section of memory on the disk, so that it knows to avoid them in the future. However during transport, or as the Hard Drive ages, new "BAD SECTORS" may appear and there is an option in the "FILE" menu to check for these.

However it is advisable to first make a back up of any partition you wish to check with this program if you have valuable data or information stored on it, as should this program find a bad sector containing data or information on it and mark it as "BAD SECTOR", then you will have lost the information contained on that sector.

PARTIONING.

The ATARI ST operating system is at this moment capable of addressing upto 16 mb of memory in one go. Due to the fact that the Hard Drive has a considerably larger memory, it is necessary to "PARTITION" or split the drive up

into several smaller segments of 16 mb or SMALLER! Using the GE-Soft Utilities supplied, you may have upto fourteen "PARTITIONS" on your Hard Drive.

The new ATARI ST operating system TOS 1.4 will be able to address upto 32 mb in one go, thus allowing you to have a total of 448 mb attached to your system. The present operating system restricts us to 224 mb. To access these partitions, you will need to install the relevant Hard Disk Icons via the GEM desktop, using the "INSTALL DRIVE" command.

To actually "PARTITION" the Hard Drive, select the DMA and drive number you wish to partition, click on the first partition number and enter the size of the partition you want (Not exceeding 16 mb), you will see that the "FREE" box underneath is reduced by the amount you have entered. Next you will be prompted for the "PARTITION NAME", which by default is GEM. Normally you would just press "RETURN" and the partition would be named GEM.

However you may be using an emulator or another operating system and then you would have to enter the relevant information here, such as DOS.

Partition Sizes

1:	12920	GEM	8:	10000	GEM
2:	10000	GEM	9:	0	
3:	10000	GEM	10:	0	
4:	10000	GEM	11:	0	
5:	10000	GEM	12:	0	
6:	10000	GEM	13:	0	
7:	10000	GEM	14:	0	

Drive Size: 82920 kbyte
Free: 0 kbyte

When you have selected your "PARTITION" sizes, you must give the command to "WRITE PARTITION".

You may "RE-PARTITION" the disk at any time, even without having to reformat it, but first make a back up of any data or information contained on it, as the "PARTITION" command also removes all data and information contained on the Hard Drive.

The command "CLEAR PARTITION" does just that, and removes all data and information contained on the chosen "PARTITION".

AUTO !BOOT

Should you wish to start directly from the Hard Drive without first !Booting from Floppy Disk, then you should click on the box "AUTO BOOT", and this will enable the computer to !Boot from the Hard Drive.

This normally takes from seven to 10 seconds, due to the fact that the ATARI ST first looks for a !Boot file on the Floppy Disk. This time may be considerably shortened by placing a formatted floppy disk in "FLOPPY DRIVE A".

Should you have your "AUTO !BOOT" enabled but for one reason or the other, you wish to !Boot

from Floppy Disk, Then you may do so by simply Holding in the "CONTROL" key when the computer first accesses the Floppy Drive (Please note that the Hard drive light WILL FLASH BRIEFLY, but that the Hard Drive program will not be loaded). If you should now wish to access the Hard Drive, then it is a simple matter of resetting the computer (Press and release the "RESET" button at the back, or running the *GE_HDI.PRG*

GE_HDI.PRG

For everyday use of the Hard Drive with Auto !Booting enabled, this program is not needed. However, should you disable the Auto !Booting option then to access the hard disk you will need to run this program.

Should you accidentally place one or more programs that have an automatic resetting function in the AUTO folder (Such as a Ram Disk program), or some Accessory programs that are incompatible with one another, then you may find that the Hard Drive will continue resetting the computer.

This is an especially easy trap to fall into when Auto !Booting from the Hard Drive and using a RAM DISK program, or an alternative "CONTROL PANEL" such as are available from many Public Domain Libraries. If you should accidentally install the RAM DISK the computer

will write this to the DESKTOP.INF file, reset the computer, !Boot from the Hard Drive, read from the AUTO Folder and DESKTOP.INF file that you want the RAM DISK, reset the computer to install it, and so on in a vicious circle. There are two ways to regain control over your computer:

1. Switch the Hard Drive on, when it's upto speed switch on your computer, and then use the "CONTROL" key method to force the computer to !Boot from the Floppy Drive (Remember, on the MEGA ST computer TOS, you must wait until the computer tries to access the Floppy Drive, and as soon as the light from DRIVE A comes on press the "CONTROL" key, **BUT NOT BEFORE**, and then you can run *GE_HDI.PRG* from floppy and use the "INSTALL DRIVE" command to access DRIVE C, whereupon you may remove or disable the offending programs or accessories.

2. Leave the Hard Drive **SWITCHED OFF**, !Boot from the Floppy Drive when the GEM Desktop appears, **SWITCH ON** the Hard Drive and when it's up to speed, then run the *GE_HDI.PRG* from the Floppy Drive, and proceed as described in the previous section.

For users of ATARI ST computers

who still load TOS from Floppy Disk, you may use the GES Series Hard Drive, but will need to place the *GE_HDI.PRG* in you AUTO Folder on your !Boot disk, and save the desktop info file with the Hard Drive Icons to your !Boot disk as well. Please ensure that you have then dissabled the Auto !Booting option.

GE_PARK.PRG

This program is supplied for the simple reason that you may already have another Hard Drive from another supplier whose standards are different from ours, and therefore may not be fitted with Hardware Auto Parking, or you may aquire a cheap second drive and controller that you wish to fit in the spare section of our housing, or Daisy Chain to our Hard Drive. Should it not be an Auto Parking drive (ALL FULL CIRCLE TECHNOLOGIES GES Series drives are Auto !Booting AND Auto Parking!), then it is a simple matter to run this program by double clicking on it, and then pressing the "RETURN" key.

SAVEBACK

It's one of those things that you say "It'll never happen to me", knock on wood, but sooner or later, just like the common cold or the flu, it's your turn to be "THE ONE" it's just happend too. Yes

the dreaded monster has reared it's ugly head and you've either lost all or some of your data and information, due to wear and tear, accidental deletion, a virus, or just plain bad luck!

For this reason we have included the Hard Drive user's best friend, "SAFEBACK.PRG". In the folder of the same name, you'll find this program, and my advice is use it at least once a month, and if your're a business user, at least once a week, or whenever you change important data or information. Remember, it's always the other guy, but you might just be the other guy this week!

See the separate manual for information on this extremely useful program.

FOLDR100.PRG

Due to a fault in the TOS operating system (This has been cleared in TOS 1.4), the ATARI ST cannot open more than FOURTY folders in one session without being reset. For the Floppy Drive user, this doesn't pose a great problem, but for the Hard Drive user, it means your computer can crash on you very quickly indeed.

For this purpose we have included the Public Domain program *FOLDR100.PRG* which will allow you to open upto ONE HUNDRED folders per session, and uses only a small amount of memory. You

may increase the amount of folders that you may open in one session by simply altering (Via the INFO menu), the program name.

For instance changing the name to read FOLDR200.PRГ would allow you to open TWO HUNDRED folders, while FOLDR150.PRГ would allow you to open ONE HUNDRED and FIFTY folders in one session.

LOADING AND SAVING WITH A HARD DRIVE

Loading and Saving on a Hard Drive are done in exactly the same way as on a Floppy Drive, except of course, much faster. For instance you should know about the trick of holding in the "ALTER-NATE" key to allow you to access a "PARTITION" other than C. Another handy utility to be found in Public Domain Libraries is the File Selector, where you can just click on a "PAD" to change the drive you Load or Save a file to from any program, clicking further on folders to change the PATH.

PROBLEMS AND THEIR SOLUTIONS.

1. Your Hard Drive doesn't come on at all.

a. Check to see if your power cable is firmly connected at both ends, and that the power is on at that particular socket (Use another apparatus or an electrical meter to

check this).

b. Check if the plug or socket is a fused type, and if so, whether the fuse has blown or not.

2. Your computer hasn't recognised the Hard Drive.

a. The Hard Drive wasn't up to operating speed when you switched on your computer. Reset the computer.

b. Check that the DMA cables go to the correct sockets. Hard Drive DMA Out to Computer DMA In. SWITCH OFF ALL COMPONENTS, and re-connect cables in the correct order. Then try again.

c. Check to see if you have installed the Hard Drive Icons, and if the drive was not set to "Auto !Boot", then run GE_HDI.PRГ from Floppy Disk.

3. Your Computer writes garbage over the screen, or over the window you've just opened.

a. You've just encountered the (in)famous ATARI ST FORTY FOLDER problem. Place the FOLDR100.PRГ in your AUTO folder on your !Boot disk.